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EXXON LABARGE PROJECT

1985 QUALITY CONTROL/

QUALITY ASSURANCE

PROGRAM ANALYSIS

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EXXON EVALUATION

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PRODUCTION DEPARTMENT
SOUTHWEST/ROCKY MOUNTAIN DIVISION

THOMAS J. TIBBITTS
REGULATORY AFFAIRS MANAGER

April 1, 1986

Mr. Don H. Sweep
District Manager
Bureau of Land Management
P.O. Box 1869, Hwy 191 North
Rock Springs, WY 82902-1869

Mr. Ernie Nunn
Acting Forest Supervisor
United States Forest Service
Bridger-Teton National Forest
P.O. Box 1888
Jackson, WY 83001

Dear Sirs:

Attached is our evaluation of the Quality Assurance/Quality Control Program for the LaBarge Project, Field Season 1985.

T. J. Tibbitts
T. J. Tibbitts

TJT:rk

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A DIVISION OF EXXON CORPORATION

Exxon Company, U.S.A.
Southwest Rocky Mountain Division, Regulatory Affairs
LaBarge Project
Quality Assurance/Quality Control Program Evaluation,
Field Season 1985

- BACKGROUND

Before construction began on the LaBarge Project in Southwestern Wyoming an extensive number of environmental studies were done to evaluate the potential impacts a construction project of this magnitude would have on the area's environment. It was the conclusion of the Bureau of Land Management (BLM) and the U.S. Forest Service (FS) who have jurisdiction over the project area that development without strict concern for the environment could result in irreparable damage. Pipeline, road building, power line, drilling and facility work, all necessary to bring the gas field into production, could adversely affect the sensitive elk, moose and deer habitat located in the area as well as vegetation, streams, trees etc. Special consideration was also given to the potential stream impacts which could affect the habitat for the rare Colorado Cutthroat Trout.

In early 1985 an accelerated development program for the LaBarge Project Well Field was presented to the federal agencies. This Phase I plan covered construction for bringing 18 wells into production, 134 miles of gas gathering lines, four manifold sites, electrical power to all well sites and a 40 mile feed gas pipeline to the Shute Creek Plant Site. With this large a project and its accelerated construction schedule, the BLM and the FS were faced with a manpower problem. A large number of personnel were needed to permit all the various Phase I activities, leaving a limited number of personnel to monitor the actual construction in the field. To solve this problem a program was developed jointly between Exxon, the BLM, the Wyoming Game & Fish Department and the FS to assure permit compliance while leaving agency personnel free to work on permits in the office. Therefore, a Quality Assurance/Quality Control (QA/QC) Program was developed to be a credible, comprehensive, and self-monitoring inspection program that would consist of professional construction Quality Assurance Inspectors with experience on federal projects and a single government representative to assure permit compliance during construction. The QA inspectors worked hand in hand with the construction Quality Control (QC) inspectors.

The following is an evaluation of the LaBarge Project's QA/QC Program for 1985. We will review the goals of the program, its organization, performance, staffing and program benefits, areas of concern and planned improvements for the program in the future.

- GOALS

The objective of the QA/QC Program was to supply a credible, comprehensive, and self-monitoring inspection program to well field and feed gas pipeline construction personnel. The program would assure

permit compliance and give special attention to environmental concerns. By having this program it would allow federal personnel the time to issue construction permits quickly and demonstrate Exxon's ability to self-monitor its own construction in an environmentally sensitive area. This program would aid Exxon by assuring timely permits to build and immediate resolution of plan modification approvals, thus minimizing shutdown time and cost.

- ORGANIZATION

It was decided that five QA inspectors would be required to cover the well field and feed gas pipe line. These inspectors would be coordinated by Brian Ragsdale, an Exxon engineer with experience with construction projects on federal lands. The entire QA program would be under Division Regulatory Affairs. The LaBarge Project construction team supplied approximately 58 QC inspectors to cover all work areas and to have direct inspection responsibility over construction contractors.

To aid in the work of the QA inspectors and the compliance engineer both the BLM and the FS supplied a federal QA inspector to give on site approvals as a representative of the authorized officer. Brady Baldwin of the BLM, Rock Springs District Office and Alred Reuter of the FS, Jackson District Office were chosen. Brady and Al alternated four days a week thus supplying the project with seven day a week coverage.

Selection of the QA inspectors came from the area's consulting engineering companies. These companies supply professional inspectors having local experience with construction projects on federal lands. After careful evaluation and interviews, three inspectors from Centennial Engineering Inc., Casper; Bob Flinn, Bill Shultz, Floyd Curtis, one inspector from Rio Verde Engineering, Pinedale; Joe Morris and one inspector from Overthrust Management, Jackson; Shel Codman were chosen. Each of the five inspectors had geographical areas of responsibilities in the well field and feed gas pipeline. These areas had a variety of construction activities including road and pad building, pipelining, facility work and electrical distribution construction.

Essential to the program's success was the line of communication between the respective groups involved with the construction. In order to maintain the credibility of the QC inspectors, they were the sole contact to the contractor for all construction issues. The QA inspectors interfaced with the QC inspectors on compliance issues associated with a particular activity. The federal QA inspector worked directly with the compliance engineer and the QA inspectors to voice any of their concerns and to give field approvals.

Another responsibility of the QA inspectors was to enforce general field rules. These rules included such things as prohibiting firearms, drugs, alcohol, and dogs from the project. Adherence to traffic rules, littering and prohibiting hunting and temporary living on project were also enforced by the QA inspectors. The QA inspectors wrote "citations" for violations to these field rules (Attachment 1). It was decided by Exxon that should any one person receive more than

two such citations that they would be asked not to return to the project.

The guidelines that the QA inspectors used to assure compliance are the Construction and Use Plans for the Well Field and for the Feed Gas Pipeline and any additional stipulations contained in the actual permit. These documents gave direction on construction techniques that minimize impacts to the environment. When field modifications to these plans was necessary the QA inspectors worked with the QC inspectors to write up a "Field Modification" which described the desired change (Attachment 2). Then the compliance engineer discussed the modification with the federal QA inspector and obtained his approval signature. After his approval the field modification was signed by the responsible construction manager, distributed back to construction and filed for future reference.

In cases where the plans or guidelines in Construction and Use Plans were not complied with, the QA inspectors would issue a "Non Compliance Report" (Attachment 3). This document explained the non compliance along with how it should be corrected. These non compliance reports were signed by the federal QA inspector and the applicable construction manager. A copy of these reports went back to the contractor for action and to serve as record of noncompliance.

- PERFORMANCE

The performance of the QA/QC program has been exceptional. As referenced in the Riley Ridge Implementation Task Force Evaluation Report of August 1985. "In consideration of the magnitude of on going construction activity associated with Exxon's accelerated well field development schedule, an exceptional job of permit compliance has occurred." This report goes on to state; "... as a result of the excellent QA/QC program developed for this project, serious problems have been curtailed." The QA/QC program has been referenced in other federal publications for its effectiveness and possible applications on other large projects. During the 1985 field season the agencies requested the program be extended to include surface compliance on drilling locations. Although this was not included in the original scope of the program, QA inspectors made regular visits to all drilling sites to assist the Exxon personnel in complying with surface environmental and regulatory concerns.

The QA/QC program personnel were also in the field to eliminate problems before they occurred and damaged the environment. This was specially important when working in the fragile habitat of the streams and riparian zones. The QA inspectors were constantly working with the pipelining QC inspectors to assure these areas were protected as much as possible during the right-of-way clearing and backfilling operations.

Because of the geographical areas of responsibility of the QA inspectors, they were able to coordinate not only between the government officials and construction but also help coordinate between different construction groups. Many times areas would have to be utilized by several different groups at same times. Since the QA inspectors were

familiar with all the groups in the well field they could assist these groups in reasoning out a plan to proceed.

During the field season of 1985 QA/QC program personnel processed and received approval for 120 field modifications. These field modifications were issued in a timely fashion to keep construction working and kept the government abreast of what was going on in the field. In early 1986 these field modifications will be included in construction certifications of the projects in the well field and feed gas pipeline as part of the "as built" survey of the facility. There were 58 non compliance reports issued along with 21 citations for violations to well field rules. These documents will be used in assessing a contractor's performance in complying with regulatory stipulations.

- STAFFING AND PROGRAM BENEFITS

The 5 QA inspectors began work on May 6, 1985. Due to a general reduction in construction activity the staff was reduced to four on August 11, reduced to three on September 14 and was further reduced to two by October 6. At year end there was one QA inspector on staff. He will remain through the winter, or until ground disturbance has been completed, to work with the snow removal activities and construction in the well field.

Cost benefits associated with the program are difficult to estimate. The QA/QC Program was successful in preventing adverse impacts to the environment before they occurred. In addition, agency personnel were more effectively utilized to issue permits and handle other projects.

- AREAS OF CONCERN

Although the performance of the 1985 QA/QC Program was exemplary, some problem areas did exist. We will cover the solutions to these concerns in "Planned Improvements" for the 1986 QA/QC Program.

Since a self monitoring inspection program is a new concept for construction projects on federal lands, the 1985 QA/QC Program created a number of questions for construction QC inspectors. Even though many inspectors had experience working on federal construction projects, the coordination necessary to work with QA inspectors was a new responsibility. An approved Construction and Use Plan was not distributed until the late spring of 1985. This resulted in key construction personnel not receiving a copy until after construction began. If these construction inspectors could have had this plan they would have been sensitized to the magnitude and variety of concerns associated with construction in this area and the need for such an inspection program.

Similar to our own construction personnel, many contractors were not used to working with a self monitoring inspection program. In some cases the contractor did not realize the severity of being in violation.

In some cases, it was difficult for the QA inspectors to enforce the well field rules (Attachment 4). Even though the project had an

impressive safety record associated with vehicle accidents, some people were reported to be driving unsafely. Vehicle speeding has become a particular concern of both the BLM and FS. Since the QA inspectors displayed no signs of being enforcement personnel, it was very difficult to stop anyone for speeding, littering, etc.

- PLANNED IMPROVEMENTS

The following modifications will be made to further improve the 1986 QA/QC Program.

1. Coordinate with the Project Engineering and Construction Groups to distribute the Construction and Use Plan to key construction personnel and hold formal training sessions with the 1986 QC inspectors. As a supplement to this plan we will enclose an overview of the QA/QC Program. This will inform our own personnel to the necessity and the mechanics of the program along with further educating them on the measures that must be taken to construct on the project.
2. If possible during the pre bid meeting and/or during the pre construction meeting, communicate to the contractor the background, mechanics and the well field rules enforced by the QA/QC Program. During these meetings we will outline to the contractor that noncompliance reports and citations will be kept in his company's file. Should this file have three or more violations in it a letter written by the Compliance Engineer and signed by the Construction Manager will be sent to the contractor's home office. This letter, in which the contractor's senior on site official will be copied, will describe the violations, and Exxon's commitment to regulatory compliance.
3. To aid in the enforcement of the general well field rules we will solicit the help of the uniformed security force already being used in the well field. We will also utilize Exxon Managers and Construction Supervisors to help issue citations whenever they see violations in the well field.

- CONCLUSIONS

The LaBarge Project QA/QC program was successful in achieving its goals in 1985. The program was able to aid construction personnel in complying with regulatory stipulations and protecting the environment from excessive impacts. The program was also successful in processing field modifications in a timely manner to minimize construction delays and by self-monitoring construction allowed agency personnel time to process permits quickly.

LABARGE PROJECT
GENERAL FIELD RULES

"ALL ACTIVITIES ASSOCIATED WITH THE PROJECT WILL BE CONDUCTED IN A MANNER THAT WILL AVOID OR MINIMIZE DEGRADATION OF AIR, WILDLIFE, LAND AND WATER QUALITY."

THESE RULES APPLY TO ALL EXXON AND EXXON CONTRACTED PERSONNEL WHILE INVOLVED WITH CONSTRUCTION AND OPERATION ACTIVITIES ON THE LABARGE PROJECT IN THE PROJECT AREA.

1. No alcoholic or illegal substances are allowed.
2. No firearms or fireworks are allowed.
3. No dogs, except seeing eye dogs or guard dogs, are allowed.
4. Hunting or harrassment of wildlife is prohibited.
5. Camping or temporary living is prohibited.
6. Speed limit is 25 MPH for all one lane roads and 35 MPH on all two lane roads unless posted otherwise.
7. Littering is prohibited.
8. Toxic material will not be released in any lake or water drainage.
9. All operators will mantain satisfactory spark arresters on all internal combustion engines.
10. The use of pesticides (insecticides, herbicides, fungicides, rodenticides, etc.) is prohibited.
11. Any automotive accident will be reported to the Construction Manager at the Dehydration Site.
12. Exxon and contractors may be called upon to supply crews for fire fighting.
13. No signs (or advertising) will be erected in the field or on highway without authorization.

BLM EVALUATION



United States Department of the Interior 3162.3 (410a)

BUREAU OF LAND MANAGEMENT
ROCK SPRINGS DISTRICT OFFICEP.O. Box 1869
Rock Springs, Wyoming 82902-1869
(307) 382-5350

MAR 19 1986

Memorandum

To: District Manager

From: Assistant District Manager, Mineral Resources

Subject: Review/Analysis of the 1985 Quality Assurance/Quality Control
Program for the Exxon LaBarge Project

The subject report is attached. Based on my review of the QA/QC program used for the LaBarge Project, I feel the concept should be routinely considered for other project developments proposed on Federal lands.

With your concurrence, I will develop a proposal that the concept be considered on future projects on Federal lands. This proposal would be coordinated with the Bridger-Teton National Forest and submitted through channels for consideration at the Washington Headquarters level.

If you have concerns or questions, I'll be happy to discuss the attached report at your convenience.

I concur:

District Manager

cc:

B. McMahan (P&EA) w/enclosure
A. Reuter (BTNF) w/enclosure
D. Potter (PRA) w/enclosure
J. Carlson (BFRD) w/enclosure
R. Wenker (KRA) w/enclosure
D. Schramm (GRRA) w/enclosure

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EXXON LABARGE PROJECT

Review/Analysis of 1985 Quality

Assurance/Quality Control Program

Background

Exxon's LaBarge Project, located in Western Wyoming, involves development of a deep gas field (3 Federal Units) located primarily on lands administered by the Forest Service (FS) and Bureau of Land Management (BLM). To date, 22 gas wells, 4 manifold sites, 39 miles of gathering lines and water lines (multiple pipelines), a dehydration facility, a 39 mile sour gas trunkline, a gas conditioning plant, 20 miles of access road and 50 miles of powerline have been or are being constructed within or in the vicinity of the well field area. Development drilling activity and limited site construction began in 1984, however, the bulk of well field construction activity occurred between May and November, 1985.

Construction, operation, and reclamation of the project is governed by the Riley Ridge Final Environmental Impact Statement (FEIS) and Record of Decision (ROD). Prior to beginning construction, Exxon submitted and received approval of overall Construction and Use Plans (CU) and site specific plans for each individual construction activity. Standard field construction survey control governed earthwork activities. The project was controlled by Exxon personnel on-site and in Midland, Texas and permitting and plan approval was conducted by the FS's Big Piney Ranger District and Bridger-Teton National Forest Supervisor's Office (Jackson, Wyoming) and BLM's Pinedale Resource Area and Rock Springs District.

What is Quality Assurance/Quality Control?

The Quality Assurance/Quality Control (QA/QC) concept is not new. QA/QC has been widely used in industrial and major construction project applications for several years. The concept is designed to assure that product/project quality is maintained in a systematic way.

QA/QC achieves that goal through an independent two tiered system monitoring project activities. The concept depends on advance development of plans and specifications governing the work. Utilizing these plans and specifications, the responsibilities of QA and QC are as follows:

Quality Control - QC is directly responsible for ensuring that project activities are conducted in accordance with approved specifications and plans. Typically, each major construction operation is observed by a QC Inspector. QC Inspectors are in the general vicinity of their assigned operation on a full-time basis and are charged with determining whether the contractor is in compliance with specifications, procedures, etc. If non-compliance occurs, the QC Inspector takes immediate action instructing the contractor to correct the deficiency. Non-compliance is documented via non-compliance reports (NCR) or, at a minimum, in the QC Inspector's daily log or diary.

Quality Assurance - QA is responsible for determining that the project's QC system is effectively operating to ensure compliance. The QA Inspector accomplishes this, generally through periodic on-site visits to the various construction sites, audit review of QC records and discussion with QC inspectors. If QA review indicates any problems with the QC system, they are documented and brought to the attention of the Chief QC Inspector for corrections. On a typical project, one QA Inspector may cover the same scope of work activity as 10-20 QC Inspectors.

To be effective and credible, the QA organization should be organizationally independent from, but closely coordinated with, the QC system. QC operates in a daily on-site monitoring mode while QA's role is typically more that of system review/analysis and record audit. Together the two form a coordinated project monitoring and oversight function keeping project management personnel informed of the projects progress and overall quality.

The LaBarge Project Quality Assurance/Quality Control Program

Between November 1984 and April 1985, several meetings were held between Exxon, FS, and BLM to determine the most effective and efficient method of handling the peak permit and construction workload anticipated during the 1985 "field season." Expeditious permit processing was needed to support an aggressive construction schedule and a sound construction control program was needed to insure field work took place in compliance with approved plans. Field compliance was considered critical due to the sheer magnitude of the project development and the sensitive nature of the project area.

The concept agreed to by all parties for construction control consisted of a comprehensive industry Quality Assurance/Quality Control Program with limited Federal oversight. Exxon's QC Program consisted of 58 inspectors under the direction of 15 field Construction Coordinators and Technical Foremen. These QC personnel were responsible for direct inspection of construction activities to ensure compliance with approved plans and specifications. QA was staffed by 5 inspectors under the supervision of a Compliance Engineer. The primary responsibility of QA personnel was to monitor the QC program and provide general oversight to the project with emphasis on environmental considerations. Staffing of the QA/QC program was provided by Exxon and consisted primarily of personnel contracted from various consulting firms in the region.

To interact with Exxon's QA/QC staff in the field, the FS and BLM jointly appointed two Authorized Officer's Representatives (AOR's). The AORs (one from each agency) provided seven day coverage of the project on a rotating schedule. The AOR's jurisdiction covered the entire well field and gas trunkline without regard for the administrative boundary between BLM and FS lands. The primary role of the AOR team was to oversee the effectiveness of Exxon's QA/QC program and to act on field modifications to approved plans. AOR personnel were delegated responsibility to approve field changes and judge when contact with the appropriate Authorized Officer was required.

Results of the 1985 Season

Between May 1985 and January 1986, 6 well sites, 4 manifold sites, 39 miles of multiple string pipeline, 49 miles of road (new and reconstructed), and 39 miles of powerline were constructed in the well field. In addition, the 39 mile feed

gas trunkline was substantially completed including construction of 9 miles of permanent access road and 11 pipeline block valves. During the same period, reclamation work was performed on over 1400 acres of temporarily disturbed lands. This activity required approval of approximately 120 field design modifications.

The experience with the 1985 construction season clearly demonstrated the value of the QA/QC concept as described above. Overall, the system worked effectively and allowed for industry self compliance with minimal Federal involvement in the field. AORs, as the focal point for field contact with Exxon, provided clear, consistent Federal input to the process of construction control. By assuming responsibility for their own compliance and construction control, Exxon enabled the BLM and FS to handle the massive Riley Ridge Project without hiring additional personnel. Self-compliance (QA/QC) plus an expedited permit approval system must be considered essential requisites to a project of this magnitude.

Analysis of the QA/QC Program

Due to the potential value of the QA/QC concept both in future LaBarge Project activity and for other projects requiring Federal approval, a "post season" review of the system was conducted. The review was based on interviews and reports prepared by the AORs, contact with other BLM and FS personnel involved with the project and interviews with Exxon personnel and consultants employed in both QA and QC functions on the LaBarge Project.

Based on the above, the following basic conclusions were evident:

1. The use of a self-monitoring program of this type for large projects such as LaBarge is valid. In light of reduced Federal Budgets and the concept of users paying for administrative costs to their project proposals, it is likely essential.
2. Success of the concept depends on advance support and commitment by management (both Government and Industry).
3. The effectiveness of the concept and to a greater degree, specific activities conducted under this system is directly dependent on the backgrounds, personalities, and qualifications of the individuals involved.
4. The independence of the QA staff relative to the construction organization is an important factor.
5. The concept shows applicability, in modified form, to virtually all proposals for mineral or land development within Federal jurisdiction.

Details of the above conclusions are discussed below:

1. Use of QA/QC and self monitoring on large projects:

The use of QA/QC and its many benefits (both in terms of efficiency and promoting user responsibility for field activities) were clearly demonstrated on the LaBarge Project in 1985. This approach minimized the numbers of Agency personnel needed in the field and allowed the BLM and FS to handle the workload of this major project without additional personnel.

2. Management support is essential:

The self monitoring concept can only succeed if management is committed and supportive of both the approach and the personnel involved. Authorized officers must be willing to trust the judgement of Federal personnel in the field and the company's management must be committed to compliance and self-monitoring. This commitment necessarily includes willingness to alter or even temporarily shut down certain project operations if chronic non-compliance or field conditions require.

3. The concept depends on the people involved:

Successful implementation of QA/QC self-monitoring is directly dependent on the background, qualifications and personalities of QA, QC and Federal personnel. Inspection personnel should be experienced in construction and/or project management. Use of the concept will, generally, make qualified personnel more readily accessible since, 1) experienced personnel are commonly available in the private sector through consultants, and 2) few Federal personnel are required to interface with the company's QA/QC organization. This latter point allows the Authorized Officer to utilize their most experienced people to handle larger projects or several small operations.

4. The importance of QA organizational independence:

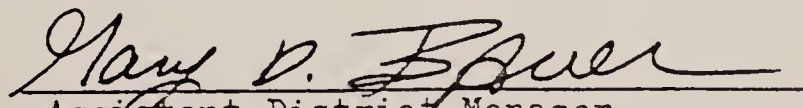
A credible, effective QA/QC system depends on the organizational independence of the QA staff assigned to the project. If both QA and QC report to the same field manager, concerns raised by QA can tend to be discounted in favor of progress or economy. An organizationally independent QA staff tends to result in a "checked and balanced" monitoring system.

5. Applicability of the concept to other types of proposals:

The QA/QC concept is applicable to development projects regardless of magnitude. For smaller projects such as a single well and access road, pipeline or powerline, the monitoring organization can be as small as a single full, or even part-time QC Inspector. A key element of this approach is development of an approved plan of development prior to commencement of construction.

Summary and Recommendations

It is recommended that BLM-Rock Springs, in coordination with the Forest Service (Bridger-Teton National Forest), encourage our respective agencies to promote the use of the QA/QC self-monitoring approach to the maximum extent practical for projects proposed on Federal lands. The LaBarge Project was but one test of the concept, however, this experience, coupled with past effective use of this approach in industrial and project applications clearly demonstrates its value.


 Assistant District Manager
 Mineral Resources
 Rock Springs District Office
 Bureau of Land Management

AOR^S EVALUATION

Riley Ridge (LaBarge Project)

Government/Industry Quality Assurance Quality Control Program 1985

The Exxon LaBarge project is a proposal to construct, operate, and abandon a deep gas well field in western Wyoming; gathering lines for the transportation of sour gas within the well field to dehydration facilities; dehydration facilities; trunklines for the shipment of sour gas from the well field dehydration facilities to the treatment plants; three treatment plants; sales gas pipelines; power transmission lines for supplying power to the well field and treatment plants; and facilities for handling and transporting by-products (sulfur and carbon dioxide) to markets. Field operations for this 2-1/2 billion dollar project started in May 1985.

Several meetings with the Bureau of Land Management, United States Forest Service and Exxon U.S.A. were held to discuss the most effective and efficient way to administer this project.

The BLM/USFS did not have sufficient manpower to handle timely permit processing and field compliance. The decision was made to establish a BLM/USFS Authorized Officer Representative, and an Exxon Quality Assurance/Quality Control Program (QA/QC) (attached chart). In doing this, only two Authorized Officer's Representatives (AORs) were required for administration and inspection in the field.

The following is a summation of the Riley Ridge Authorized Officers Representative, Quality Assurance, and Quality Control Program:

The purpose of the AOR positions were as follows:

- Represent the BLM and the USFS in post authorization monitoring, instructing, and negotiating with Exxon Company, U.S.A. during the construction phase of the LaBarge project (well field and sour gas trunkline).
- Coordinate all field visits, inspections and/or contacts with Exxon and the BLM/USFS for the LaBarge project.
- Submit weekly activity reports to the BLM Area Manager and the USFS District Ranger.
- Provide staff support to the BLM and USFS on matters dealing with the LaBarge field development.
- Ensure that the Exxon quality assurance, quality control programs were functioning properly and that all work was being performed in accordance with approved conditions and approved plans, etc.

The purpose of the QA/QC Program was to provide comprehensive, credible self-complying control of the Construction and Use Plan established for the Riley Ridge Project.

Features of the program were as follows:

- Quality Assurance program was separate from, but had an equal voice in the construction activities in the well field.
- QA utilized inspectors approved by the Bureau of Land Management/Forest Service. QA inspectors were from a contractor not already being used to supply QC personnel.
- QC was staffed with approximately 58 contract QC inspectors supervised by 15 Exxon Construction Coordinators and Technical Foremen.
- QA was staffed by five contract QA inspectors supervised by a Compliance Engineer and a Permit Coordinator.
- QC was in direct control over construction in the well field. Their responsibility was to enforce the proper construction techniques while environmental concerns and project regulations were complied with.
- QA advised and monitored QC in regard to environmental concerns while enforcing project regulations.
- QA/QC was under the supervision of the Construction Manager
- Both QA and QC inspectors had the authority to hold any activity in the well field. When this action was necessary, the appropriate supervisor were informed and communicated the problem to the Compliance Engineer.

Results - First Year

AOR - Discussion

- 1) The Forest Supervisor, District Ranger, BLM District Manager, and Area Manager must allow the AORs the freedom to make decisions. These administrators must be receptive to the AOR concept.
- 2) At the LaBarge project, the AORs had the authority to work with and direct the agencies regulation affairs.
- 3) Exxon fully supported the AOR concept and did not attempt to "end run" the AOR positions. The company believed in it and worked with the AORs rather than going to the Ranger or District Manager.
- 4) When you have two AORs (or more) they have to see eye to eye and their personalities must mesh. The relationship has to be a marriage and not a divorce (conflict) situation. If there is a conflict, one company could play one AOR against the other.
- 5) The AORs must have length and breadth of experience and be willing to stand up for what they feel is essential to the running of a program. The AOR selection must be done carefully, and based on background and experience of available personnel.
- 6) Agencies must be willing to commit staff who are as knowledgeable, experienced, and professional as the industry is expected to provide.

QA-QC - Positive Results

- 1) The concept allows for minimal federal involvement.
- 2) Response time to company requests is quick. QA and QC personnel can, through channels, quickly contact the AORs.
- 3) Seven-day coverage is available, since the process requires minimal federal involvement.
- 4) Exxon's cooperative spirit and their management made the QA-QC Program function. The company wanted it to work and they looked on it as part of doing a quality job. A reverse of the Exxon approach could occur and must be accounted for.
- 5) Exxon, early in the year, laid out the "chain of command" for the QA-QC Program. The Program worked by following that communicative path.

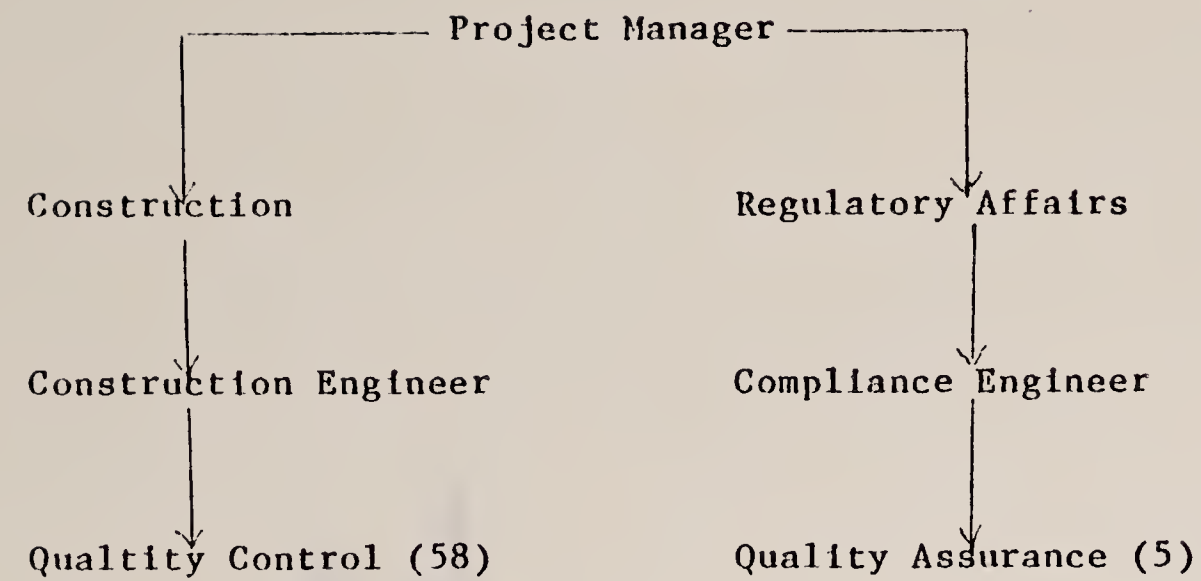
QA-QC - Negative Results

- 1) QC instruction not always that clear and consequently, they sided with the contractor. The QC personnel too often sided with the contractor.
- 2) No federal involvement with the selection of the QC personnel. Feds were involved with QA selection.
- 3) Quality QCs were let go because they didn't play ball with the contractors. Feds were not involved with the discharge of QC, company did it on its own.
- 4) Because this project had a short field season, there was a tendency to let shutdowns slide. There had to be a major crisis or foul up for the QA-QC and AORs to act.
- 5) The Feds were not involved in the discharge of QAs, as the work began to slow down. No involvement with the selection of the QAs that stayed. A better quality QA was let go and poorer quality QA kept on.
- 6) Exxon's enthusiasm for the QA-QC Program seemed to drop as fall and winter approached.
- 7) Lack of QC personnel on the power pole and reclamation phase, due in part to No. 6 above. Again, no federal involvement in QC Program for reclamation and power pole projects.
- 8) No QA shift of personnel ^{from} ~~form~~ the trunkline project to the power pole startup.
- 9) Lack of QA assignments (except for trunkline) to certain sections of the well field. There was too much rotation of the areas of responsibility for the QAs, resulting in the lack of knowing what was going on in a newly assigned area.
- 10) The ability to discharge contractors because of repeated or numerous violations. No point system or level of infraction was established where a contractor could be let go.

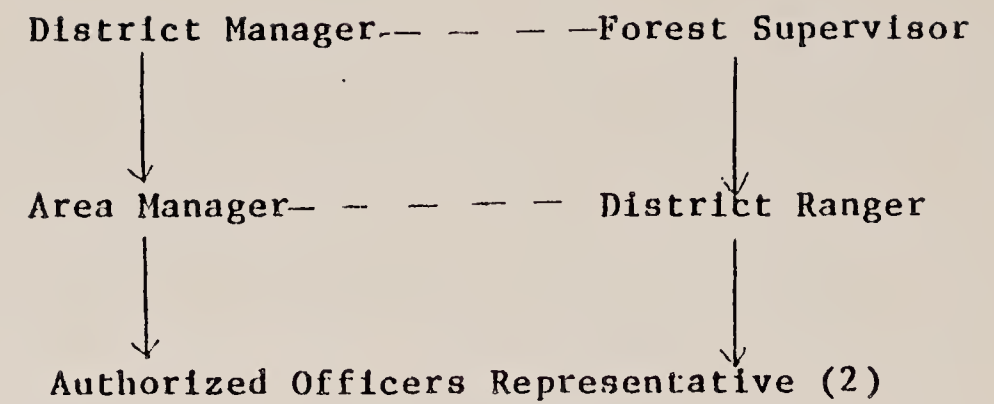
To Be Considered -

1. Selecting AORs before project starts, so that they can be a part of the ES team, or at least review Record of Decision and Construction Use Plan.
2. AORs have a working knowledge of construction, timbering, earth work, pipeline, and powerline technology.
3. AORs be familiar with the compliance programs of the BLM and USFS.
4. Agencies should review and be a part of the selection process of QAs.

Exxon U.S.A.



BLM/USFS



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Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

